# LED Fluorescence Microscope - Trinocular Epi-Fluorescence Microscope - 6-Position Turret, FN 23

Model **MSMSC-F43NSWISS** | Brand **Master Science**





The Master Science Fluorescence Microscope is an upright research microscope built around an infinity optical system and a broadband high-power LED fluorescence source. The LED covers 350 to 760 nm, needs no warm-up and can be switched on and off at will, so fluorescence work starts straight away.

KEY HIGHLIGHTS

- Ready immediately
- Six filter positions
- Consistent brightness
- Comfortable for long sessions
- Four contrast methods

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## Overview

A six-position turret carries the filter cubes, with blue, green and ultraviolet excitation sets fitted as standard. Besides fluorescence, the Master Science Fluorescence Microscope supports brightfield, phase contrast and darkfield observation, and a light intensity manager keeps brightness matched as objectives are changed.

For routine brightfield research work, see the Master Science semi-apochromatic biological microscope.

The Master Science Fluorescence Microscope is used for fluorescence and multi-mode observation in:

## Key Benefits

**Ready immediately**
: the LED source of the Master Science Fluorescence Microscope needs no preheating.

**Six filter positions**
: cubes are exchanged without tools.

**Consistent brightness**
: light intensity manager sets the level for each objective.

**Comfortable for long sessions**
: low-position stage and focus controls.

**Four contrast methods**
: brightfield, fluorescence, phase contrast and darkfield.

## Technical Specifications

| GENERAL | |
|---|---|
| General | Specifications of the Master Science Fluorescence Microscope are given below. |
| Brand | Master Science |
| Model Number | MSMSC-F43NSWISS |
| SKU | MSMSC-F43NSWISS |
| Observation Tube | Tilting trinocular, interpupillary distance 50-75 mm |
| Viewing Head | Siedentopf head, inclined at 30° |
| Light Split Ratio (Binocular/Trinocular) | 100:0 / 20:80 / 0:100 |
| Eyepiece | Wide field 10X/23 mm; 10X/25 mm (optional) |
| Objectives | Plan semi-apochromatic 4X, 10X, 40X, 100X; 20X (optional) |
| Epi-fluorescence Illuminator | 6-position turret; B, G, U three channels standard; Y, V, R and others optional |
| U Filter Set | EX 375/30 nm; DM 415 nm; EM 460/50 nm |
| B Filter Set | EX 475/30 nm; DM 505 nm; EM 530/40 nm |
| G Filter Set | EX 540/25 nm; DM 565 nm; EM 605/55 nm |
| V Band (optional) | EX 405/30 nm; DM 440 nm; EM 450 nm LP |
| R Band (optional) | EX 620/50 nm; DM 655 nm; EM 692/45 nm |
| Y Band (optional) | EX 560/40 nm; DM 600 nm; EM 610 nm LP |
| Dual-band B/G (optional) | EX 470/40 and 575/35 nm; EM 525/40 and 625/60 nm |
| Royal Blue B2 (optional) | EX 450/50 nm; DM 485 nm; EM 495 nm LP |
| Yellow G2 (optional) | EX 560/40 nm; DM 600 nm; EM 610 nm LP |
| Nosepiece | Inward quintuple nosepiece |
| Stage | Highly wear-resistant ceramic-coated stage; moving range 80 x 50 mm; precision 0.1 mm |
| Focusing | Coaxial coarse and fine adjustment; 25 mm stroke; coarse upper limit stop; adjustable coarse torque; fine scale 1 µm |
| Transmitted Illumination | Abbe condenser N.A. 1.1, Kohler illumination; warm white LED, continuously adjustable, with light intensity manager |

| OPTICAL PERFORMANCE | |
|---|---|
| Optics | Infinity optical system |
| Epi-fluorescence Light Source | Wide-spectrum high-power LED fluorescence source (standard); 4-channel light source (optional); touch-screen controller |
| Waiting for a lamp to warm up | : the LED source works the moment it is switched on. |

| COMMON PROBLEMS THIS MICROSCOPE SOLVES | |
|---|---|
| Common Problems This Microscope Solves | Fluorescence microscopy with older lamp systems brings familiar frustrations. |
| Re-adjusting brightness at every objective change | : the intensity manager does it automatically. |
| Tools needed to swap filter cubes | : the turret cubes change by hand. |
| Tired hands and shoulders | : controls sit low and close together. |

## Applications

- **FISH, FRET and CTC detection**
- **Cell biology and live bacteria observation**
- **Biological tissue examination**
- **Research and teaching laboratories**

## Ergonomics

- Low-torque, low-position fixed stage and focusing mechanism reduce hand movement and fatigue
- Wide-field trinocular tube inclined at 30°
- Light intensity management sets matching brightness for each objective automatically

## Fluorescence System

- Long-life broadband high-power LED with uniform brightness and minimal maintenance
- Spectral coverage from 350 nm to 760 nm, on/off without preheating
- Six-position fluorescence module with band-pass filter sets, replaceable without tools
- Semi-apochromatic objectives with high fluorescence sensitivity for sharp, high-contrast images

## Observation Methods

- Brightfield: condenser for continuous 20X-100X (oil) observation with a flat field
- Fluorescence: user-replaceable filter cubes and high signal-to-noise ratio, suited to FISH, FRET and CTC detection
- Phase contrast: with a phase contrast condenser, for internal cell structures and live bacteria
- Darkfield: detail reproduction from low to high magnification

## Optional Accessories

- 10X/25 mm eyepiece
- 20X plan semi-apochromatic objective
- 4-channel fluorescence light source
- Additional filter sets (V, R, Y, dual-band B/G, B2, G2)